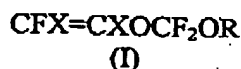


AGENT
 Ser. No. 09/840,527
 Atty Docket No. 2581/10

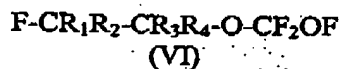
IN THE CLAIMS:1. - 20 (*Cancelled*)21. (*Presently Amended*) A process for making a fluorovinyl ether of formula

wherein:

- 1) R is a C₂-C₆ linear or branched perfluoroalkyl group, a C₅-C₆ cyclic perfluoroalkyl group, or a linear or branched perfluorooxyalkyl group comprising 2 to 6 carbon atoms and 1 to 3 oxygen atoms;
- 2) up to two fluorine atoms of the perfluoroalkyl group or the perfluorooxyalkyl group can be independently replaced with an atom selected from the group consisting of H, Cl, Br, and I; and
- 3) X is F or H;

comprising the steps of

- a) contacting hypofluorite, CF₂(OF)₂, with a first olefin of structure R₁R₂C=CR₃R₄, wherein R₁ and R₄ are the same or different and selected from H and F, and R₂ and R₃ are the same or different and selected from H and Cl, to form a first intermediate hypofluorite of structure



and

- b) contacting the first intermediate hypofluorite (VI) with a second olefin having structure R₅R₆C¹=C²R₇R₈ to form a second intermediate hypofluorite



wherein R₅, R₆, R₇, and R₈ are F; or one of R₅, R₆, R₇, and R₈ is a C₁-C₄ linear or branched perfluoroalkyl group and the others of R₅, R₆, R₇, and R₈ are F; or one of R₅, R₆, R₇, and R₈ is a C₁-C₄ linear or branched perfluorooxyalkyl group containing from one to three oxygen atoms and the others of R₅, R₆, R₇, and R₈ are F; or either pairing R₅ and R₇ or R₆ and R₈, together with the carbon atoms to which they are attached, are linked

TENT
 Ser. No. 09/840,527
 Atty Docket No. 2581/10

to form a perfluorinated C₅-C₆ cycloalkyl group and the others of R₅, R₆, R₇, and R₈ not so linked are F;

and

c) when R₂ and R₃ are both Cl, subjecting the second intermediate (VII) to a dehalogenation reaction, or, when one of R₂ and R₃ is H, subjecting the second intermediate (VII) to a dehydrohalogenation reaction;

with the proviso that when one of R₅, R₆, R₇ or R₈ is a C₂-C₄ linear or branched fluoroalkyl group or a C₂-C₄ linear or branched fluoroalkoxy group comprising from one to three oxygen atoms; then one or two of the remaining three of R₅, R₆, R₇, and R₈ are F and the remaining one or two of R₅, R₆, R₇, R₈ are selected from H, Cl, Br, and I, with the proviso that, where only one of said remaining three of R₅, R₆, R₇, and R₈ is F, then the remaining two of R₅, R₆, R₇, and R₈ are the same and linked to the same carbon atom; and further with the proviso that when R₅ and R₇ together with the carbon to which they are attached, or R₆ and R₈ together with the carbon atom to which they are attached, are linked to form a cyclic then one of the remaining two of R₅, R₆, R₇, and R₈ is F and the other is selected from H, Cl, Br, and I.

22. The process of claim 21 wherein the second olefin is reacted with hypofluorite in place of first olefin and the first intermediate hypofluorite is then reacted with the first olefin.

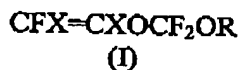
23. The process of claim 21 wherein the contacting is in a continuous process in which the mole amount of hypofluorite contacted is equal to or greater than the mole amount of first olefin R₁R₂C=R₃R₄ contacted and further wherein the residence time in the reactor is between about 0.05 and about 120 seconds, the temperature is between about -40° and about -150°C, and the first intermediate hypofluorite of the reaction of the first olefin with hypofluorite is continuously reacted with the second olefin.

24. (*Presently Amended*) A process according to claim 21 wherein the concentration of second olefin R₅R₆C=CR₇R₈ R₅R₆C²=C¹R₇R₈ is constant and greater than about 0.01M and the temperature is between about -20°C to -100° C.

TENT
 Ser. No. 09/840,527
 Atty Docket No. 2581/10

25. The process of claim 24 wherein the concentration of second olefin is equal to or greater than about 3M.

26. (Presently Amended) In a process for making a fluorovinyl ether of structure:



wherein:

- 1) R is a C₂-C₆ linear or branched perfluoroalkyl group, a C₅-C₆ cyclic perfluoroalkyl group, or a linear or branched perfluorooxyalkyl group comprising 2 to 6 carbon atoms and 1 to 3 oxygen atoms;
- 2) up to two fluorine atoms of the perfluoroalkyl group or the perfluorooxyalkyl group can be independently replaced with an atom selected from the group consisting of H, Cl, Br, and I; and
- 3) X is F or H;

the step of:

contacting a first fluoroalkene with a hypofluorite to form a first intermediate;
 then contacting the first intermediate with a second fluoroalkene to form a second intermediate;

1) the hypofluorite is of structure X₁X₂C(OF)₂ wherein X₁ and X₂ are the same or different and selected from F and CF₃; and

2) the first and second fluoroalkenes may be the same or different and are selected from R^A₁R^A₂C=CR^A₃R^A₄ and R^A₄R^A₅C=CR^A₇R^A₈ wherein each of R^A₁, R^A₂, R^A₃, R^A₄, R^A₅, R^A₆, R^A₇, and R^A₈ are the same or different and are selected from the group consisting of H, F, Cl, Br, I, -CF₂OSO₂F, -SO₂F, -C(O)F, C₁-C₅ linear or branched perfluoroalkyl, and linear or branched oxyperfluoroalkyl.